

## **CLAIMS**

We claim:

1. A method for characterizing the probability of a finger print match for at least one finger, said method comprising the steps of:

providing at least a plurality of match scores for at least one finger;

providing a finger index;

providing a number of fingers used in the search;

providing a number of times a finger index appears in a subset matches;

providing a number of records in the database;

calculating a record identification metric based on at least one of: said plurality of match scores for at least one finger; a difference in match scores between at least one finger's most probable match and at least one adjacently probable match score; a difference in matched scores between at least one finger's most probable match and an averaged score of a set of non matched candidates for the searched finger, an average match score of at least a plurality of fingers; a difference in average match scores between at least a plurality of fingers' most probable match and at least one adjacently probable average score; a difference in average matched scores between at least a plurality of finger's most probable match and an averaged score of a set of non matched candidates for the searched fingers, the finger index being searched; the number of fingers used in the search; the number of

times a finger index appears in a subset of matches; the number of records in the database; and whether an enhanced matching algorithm is to be used; and

organizing said database records as a function of said calculated record identification metric.

2. The method for characterizing the probability of a fingerprint match of claim 1, further comprising the step of modifying the calculation of said record identification metric based on the strength of said match.

3. The method for characterizing the probability of a finger print match of claim 1, wherein said subset of matches comprises a subset of most probable matches.

4. The method for characterizing the probability of a finger print match of claim 1, further comprising the step of providing at least one of said record identification metric and at least a subset of database records for further enhanced matching algorithm processing.

5. The multiple application of the method for characterizing the probability of a finger print match of claim 1, wherein at least a first record identification metric and a second record identification metric are generated; and

calculating at least a third record identification metric based on at least said first and second record identification metric.

**6.** A method for characterizing the probability of a finger print match for at least one finger, said method comprising:

providing at least a first and a second record identification metric;

providing at least a third record identification metric;

promoting at least one of said first and said second record identification metrics as a function of said at least third record identification metric.

**7.** A method for characterizing the probability of a finger print match for at least one finger, said method comprising:

providing at least a first and a second record identification metric;

providing at least a third record identification metric;

demoting at least one of said first and said second record identification metrics as a function of said at least third record identification metric.

**8.** A method for determining the credibility of fingerprint record identification match, said method comprising the steps of:

providing at least a first record identification metric in accordance with the method of claim 1;

providing at least a second record identification metric with the method of claim 5; and

calculating a match credibility metric as a function of at least one of: the number of fingers used in the search, said first record identification metric, and said second record identification metric.

9. The method for determining the credibility of fingerprint record identification match of claim 7, further comprising the step of providing a user with at least one of said first record identification metric and said second record identification metric.

10. A method for characterizing the probability of a finger print match for at least one finger, said method comprising the steps of:

providing at least a plurality of match scores for at least one finger;

providing a finger index;

providing a number of fingers used in the search;

providing a number of times a finger index appears in a subset of probable matches;

providing a number of records in the database;

calculating a record identification metric based on at least one of: said plurality of match scores for at least one finger; a difference in match scores between at least one finger's most probable match and at least one adjacently probable match score; a difference in matched scores between at least one finger's most probable match and an averaged score of a set of non

matched candidates for the searched finger; an average match score of at least a plurality of fingers; a difference in average match scores between at least a plurality of fingers' most probable match and at least one adjacently probable average score; a difference in average matched scores between at least a plurality of finger's most probable match and an averaged score of a set of non matched candidates for the searched fingers; the finger index being searched; the number of fingers used in the search; the number of times a finger index appears in a subset of probable matches; the number of records in the database; and whether an enhanced matching algorithm is to be used;

organizing said database records as a function of said calculated record identification metric

providing at least one of said record identification metric and at least a subset of database records for further enhanced matching algorithm processing;

calculating a second record identification metric based on at least one of: said plurality of match scores for at least one finger; a difference in match scores between at least one finger's most probable match and at least one adjacently probable match score; an average match score of at least a plurality of fingers; a difference in average match scores between at least a plurality of fingers' most probable match and at least one adjacently probable average score; the finger index being searched; the number of fingers used

in the search; the number of times a finger index appears in a subset of probable matches; and the number of records in the database;

calculating at least a third record identification metric based on at least said first and second record identification metric;

at least one of promoting and demoting at least one of said first and said second record identification metrics as a function of said at least third record identification metric;

calculating a match credibility metric as a function of at least one of: the number of fingers used in the search, said first record identification metric, and said second record identification metric; and

providing a user with at least one of said first record identification metric and said second record identification metric.

**11.** An automated digital processing system for characterizing the probability of a finger print match for at least one finger, said system comprising:

means for providing at least a plurality of match scores for at least one finger;

means for providing a finger index;

means for providing a number of fingers used in the search;

means for providing a number of times a finger index appears in a subset of probable matches;

means for providing a number of records in the database;

means for calculating a record identification metric based on at least one of:  
said plurality of match scores for at least one finger; a difference in match scores between at least one finger's most probable match and at least one adjacently probable match score; an average match score of at least a plurality of fingers; a difference in matched scores between at least one finger's most probable match and an averaged score of a set of non matched candidates for the searched finger; a difference in average match scores between at least a plurality of fingers' most probable match and at least one adjacently probable average score; a difference in average matched scores between at least a plurality of finger's most probable match and an averaged score of a set of non matched candidates for the searched fingers; the finger index being searched; the number of fingers used in the search; the number of times a finger index appears in a subset of probable matches; the number

of records in the database; and whether an enhanced matching algorithm is to be used;

means for organizing said database records as a function of said calculated record identification metric

means for providing at least one of said record identification metric and at least a subset of database records for further enhanced matching algorithm processing;

means for calculating a second record identification metric based on at least one of: said plurality of match scores for at least one finger; a difference in match scores between at least one finger's most probable match and at least one adjacently probable match score; an average match score of at least a plurality of fingers; a difference in matched scores between at least one finger's most probable match and an averaged score of a set of non matched candidates for the searched finger; a difference in average match scores between at least a plurality of fingers' most probable match and at least one adjacently probable average score; a difference in average matched scores between at least a plurality of finger's most probable match and an averaged score of a set of non matched candidates for the searched fingers; the finger index being searched; the number of fingers used in the search; the number of times a finger index appears in a subset of probable matches; and the number of records in the database;



means for calculating at least a third record identification metric based on at least said first and second record identification metric;

means for at least one of promoting and demoting at least one of said first and said second record identification metrics as a function of said at least third record identification metric;

means for calculating a match credibility metric as a function of at least one of: the number of fingers used in the search, said first record identification metric, and said second record identification metric; and

means for providing a user with at least one of said first record identification metric and said second record identification metric.